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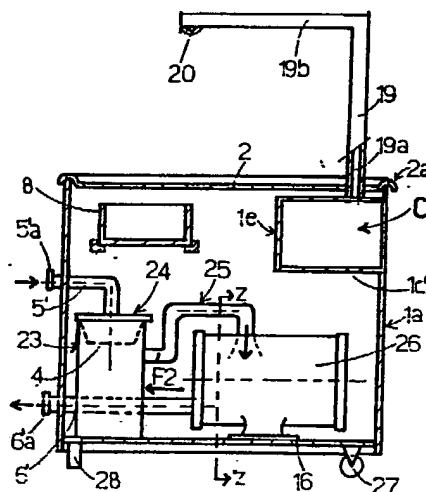
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(54) Title: **PIECE OF FURNITURE FOR THE TOILET OF PETS**

## (57) Abstract

A piece of furniture (1A) whose supporting structure is formed by peripheral walls (1a) and a base wall (1b), is supported by feet (28) and wheels (27), has a rectangular cross section and is closed by a tray-like covering element (7) at its upper end. The piece of furniture is divided into at least two spaces, one of which (C) is sealed and the other contains an annular blower (7), driven by an electric motor (12), and also a tank (23) with a vertical axis, at whose upper end a filter (4) is introduced. A suction duct (5') leads to the aperture of the tank (23), and terminates on the outside forming a pipe union (5'a) for the connection to a flexible tube which ends into a hose. The suction aperture of the blower (7) is connected to the tank (23) by means of a duct (25'), which ends into the tank (23) below the filter (4), whereas the emission aperture of hot air under pressure of the blower (7) is connected to the duct (6') which projects out of the piece of furniture (1A) forming a pipe union (6'a) for the connection to a flexible linking tube, which ends into a hose.

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DescriptionPiece of furniture for the toilet of petsTechnical Field

The present invention refers to a piece of furniture having a rectangular horizontal base, supported by two coaxial wheels and by two feet, and closed upwardly by  
5 a horizontal tray-like element, which constitutes a working table for supporting at least one animal, said piece of furniture being divided into at least two chambers or spaces, the upper one of which is sealed, and the other or other ones are used for lodging means  
10 cooperating with pipes or ducts terminating into hoses, and able to suck water, detached hairs and other impurities which are present on the animal's body after its cleaning, said means being also able to  
15 dry up its fur with the help of a stream of hot air under pressure, retaining said hairs or impurities in a filter and the water in a collecting tank.

Background Art

Presently, no such means and devices are known  
20 according to the state of the art, which perform such operations and which are employed for such purposes. After rinsing, the animals are dried up by hand by means of towels - which afterwards must be washed and dried in order to be used again -, and subsequently

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the drying is completed by means of a known drying device employing hot air, the so called "phon". Said procedure is long, laborious and not hygienical.

5     Disclosure of Invention

It is an object of the present invention to provide a piece of furniture mounted on wheels, having a table like-structure, having on its upper part a supporting plane for the animal formed by a tray-like detachable  
10     element. Inside said piece of furniture there are provided at least two chambers, one of which is sealed and contains electrical devices and the remaining one/ones contains or contain an assembly of means which allow to suck all the water present on the animal's  
15     fur, after it has been washed and rinsed, and which also allow the emission of hot air under pressure - without resorting to means which necessitate the employment of electrical resistances -, the hot air being required in order to dry up completely the  
20     animal, whereas the upper tray-like plane permits to execute in a straightforward manner any operation regarding the toilet of animals (shearing, coiffure, removal of parasites). Said piece of furniture, allows two or more operators to work simultaneously.  
25     According to the present invention the said assembly comprises: an annular blower, driven by an electric motor and associated to blowing and suction ducts,

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which terminate into pipe unions located outside said piece of furniture, which are to be connected respectively to flexible tubes which end into shaped hoses. To the suction duct, coming from the hose and  
5 flexible suction tube there is associated a tank having a vertical axis, provided on its upper part with a filter, which serves to retain hairs or other impurities which have been sucked, said tank serving for collecting water in its lower part, and being  
10 connected, below said filter, to a duct which is in communication with the suction aperture of the blower, whereas the emission aperture of hot air is directly connected to the hot air exit duct from the piece of furniture.

15

#### Brief Description of Drawings

The invention will be more clearly understood, and its further advantages will be shown more fully by means of the following description and the annexed drawings,  
20 which relate to three different embodiments of the invention, which are given for illustrative and not limitative purposes. In the drawings:

- fig. 1 is a perspective view of the front upper part  
25 and of the left side of the piece of furniture with the supporting table, of the present invention, according to a first embodiment;

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- fig. 2 is the vertical cross section which is obtained along the line (X-X) of fig. 3, parallel to the front side of the piece of furniture, which section allows to understand the respective positions of the components of the operative assembly inside the piece of furniture;
- fig. 3 is a top view of the lower part of the piece of furniture, taken along line y - y of figure 2;
- figg. 4 and 5 are respectively a lateral longitudinal view and a top view of a suction hose, according to a first variant;
- fig. 6 is a top view of a special hose, consisting of a segment of a tubular element, made of an elastically deformable material, shown in the absence of external forces;
- figs. 7 and 8 are two views, taken at the suction aperture of the hose in the direction of arrow F1 of fig. 6, in the absence of external forces (fig. 7), and, respectively, after the elastic deformation of the hose, caused by the operator's hand (fig. 8);
- fig. 9 is a top view of the hose of fig. 6, elastically deformed as shown in fig. 8;

- 5 -

- figs.10 and 11 respectively show a top view (fig. 10) and a view taken from the end of the emission aperture of hot air of a blowing hose having a tubular form like a truncated cone followed by a cylinder, the hot air being emitted along the direction of arrow F2 of fig. 10, said view being taken in the direction perpendicular with respect to the axis of the hose, and from the end where the hot air emission aperture is located;

10

- figs. 12 and 13 respectively show a lateral longitudinal view (fig. 12) and a top view (fig. 13) of a special composite pipe, which comprises an upper ejection duct of hot air under pressure to be connected to the flexible tube supplying hot air, and a lower suction duct;

15

- fig. 14 shows, in an enlarged scale, a vertical cross section of the upper part of the peripheral wall of the piece of furniture and of the covering tray-like element, similar to that shown in fig. 2, in order to show the details of the hooking system between the shaped edge of the covering element and the upper edge of the piece of furniture;

20

25

- fig. 15 shows a cross section, similar to that of fig.2, of a piece of furniture according to a second



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embodiment, and in which the inner space is divided into only two chambers or spaces, and in which some components of the operative assembly have been modified;

5

- fig. 16 shows the detail of the vertical cross section, taken along line Z-Z of fig. 15 and as seen along the arrows of said cross section; and

10 fig. 17 shows the vertical cross section of the piece of furniture, corresponding to those of figs. 2 and 15 which show the first and second embodiment, but according to a third embodiment, relating to a variant of the second embodiment of figs. 15 and 16.

15 In the figures according to said three embodiments, the parts of the assembly which are not modified, have the same alpha-numeric reference characters.

Best mode for carrying out the invention

20 With reference to the first embodiment of figures 1 to 3, the reference number 1 generally indicates the piece of furniture, having a rectangular base and comprising a supporting structure, comprising peripheral vertical walls 1a and a base wall 1b, said  
25 elements forming a tank-like element which is open at its upper end. Between the walls 1a and the base wall 1b, a horizontal wall 1c is fixed, while another

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vertical wall 1d is fixed between this latter and the base wall 1b, dividing said space into two spaces A and B. Above the wall 1c, at the right side of fig. 2, a space C is provided which is upperly bounded by an upper wall 1f, a left vertical wall 1e, by part of the wall 1c, and by three adjacent walls 1a. The chamber C is sealed. The wall 1f is arranged at a predetermined distance from the edge of the piece of furniture 1, while on the remaining part above the wall 1c it forms a space D which contains a drawer 8, sliding along rail bearings 30, and having a front wall 8a, said drawer being designed for storing instruments and additional employed for the toilet of animals. The upper opening of the piece of furniture 1 is closed by a covering tray-like element 2, having peripheral shaped edges 2a, designed to engage the edges of the piece of furniture 1.

The inner space of the piece of furniture is therefore divided into four spaces A,B,C,D among which only the spaces A,B,C are sealed. Starting from the upper wall 1f of the space C, a vertical rod of variable length 19, 19a, of a telescopic type, extends upwardly - seal passing throughout the covering element 2, while a horizontal arm 19b, more fully described afterwards, projects from the upper end of the vertical rod extending above the tray-like element 2.

The lower space A, houses a cylindrical tank 3 with

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a vertical axis, and which is open at its upper end, and in whose upper orifice a filter 4 is mounted.

Said space A communicates with the outside by means of a duct 5, which passes throughout the nearest wall 1a providing a seal at such point, ending on the outside  
5 with a pipe union 5a for attaching a flexible pipe 13, connected to a suction hose.

The sealed space B contains an annular blower 7, of a known type, provided with an air suction orifice and  
10 an air ejection orifice for hot air under pressure.

The blower 7 is driven by an electrical motor 12, which is also mounted inside the space B. The already mentioned space C contains electrical equipments, control means for the starting and safety devices.

15 In the front part of the piece of furniture there are provided doors 9 and 10, with seals and/or tight means, allowing to reach the inner spaces A and B, in order to carry out inspections, cleaning and maintenance operations of the operative assembly  
20 components contained therein.

The two chambers or spaces A and B are connected to one another by means of a horizontal tube 11, which comes out from the chamber A, and enters into the chamber or space B, when is bent downwardly, forming a  
25 hood 11a (shown in partial cross section in fig. 2), arranged and facing the casing 19a of the electric motor 12, which drives the blower 7.

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The duct for conveying hot air under pressure produced in the blower 7 is connected with the outside by means of the tube 6, which passes through the parallel walls 1d and 1a by providing a seal, and that ends on the outside of the piece of furniture 1 forming a pipe union 6a. The pressure tight crossing points through the walls 1d and 1a are realized by means of known static seals. The suction duct of the blower 7, sucks air from the inside of the space B. According to what has been said, there obviously follows that when the annular blower 7 is in an operating state, it sucks air, - through the hood 11a, and the tube 11 -, from the chamber A, air entering into said chamber A from the outside, through the duct 5. The duct 5 is L-shaped, and its upper branch is horizontal, while the following branch is vertical and oriented towards the aperture of the tank 2, so that the fluid stream sucked through the duct 5 will expand into the chamber A, from which it will be sucked through the tube 11, 11a, and it reaches the housing 12a of the electric motor 12 by cooling it. Said air is sucked into the blower or fan 7, where it is even more heated by vortex formation, centrifugation and compression, being subsequently expelled to the outside through the duct 6, 6a.

On the aperture 5a of the suction duct 5, an end of a flexible tube 13 is inserted, which has an appropriate

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length, whereas on the end 13a of the tube 13, a hose is applied, for example a hose 14 of the type shown in figs. 4, 5.

By means of said hose 14 it is possible to suck all  
5 the water from the animal's hairs, after it has been washed and rinsed, together with detached hairs and everything else present amid the hairs of the animal being treated.

All that is sucked into the duct 5 and is dropped into  
10 the tank 3, and the hairs and any other solids are retained in the filter 4, while water is deposited on the bottom of the tank 3. The sucked air expands out of the tank into the space A, and then reaches the space B, as has already been explained, and

15 subsequently it enters into the suction aperture of the blower 7, inside which it is heated; afterwards it gets out of the emission aperture which is connected to the duct, until it reaches the outer pipe union 6a, to which a flexible tube 31 is applied, at whose  
20 end a hose 15 may be applied, formed by a cylindrical part 15b and by a truncated cone 15a (figs. 10,11), which is used as feeding means of hot air under pressure or "phon" for the final touch, as for instance the drying of the treated animal.

25 The hose 15 may be held by the hand of the operator or it may be supported by an articulated joint fixed to a wall or mounted on a tripod, so that the operator may

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employ its hands for other purposes.

On the ends 13a of the tube 13, other particular kinds of hoses may be applied, as for example:

- a special hose 16 shown in figs. 6-9 comprising a  
5 tubular part made of a very flexible material which is elastically deformable (fig. 6), at whose end short longitudinal cuts 17 are provided uniformly spaced along the periphery.

The hose 16 is preferably used instead of the hose 14,  
10 in order to suck water from the hairs of the animal's legs and from the regions where the hose 14 is less effective. In fact, the operator, by using the hose 16, may deform its end with its fingers in the points indicated by the arrows F4 (fig. 6), said end forming  
15 the suction aperture, so that the hose will assume the shape shown in figs. 8 and 9, suited to the respective surface portion of the animal's body, where water must be sucked together with detached hairs and other impurities.

20 As a variant, also a composite type hose 18 (figs. 12,13) may be provided, including two separate ducts 32 and 33. Through the duct 32 hot air may be emitted, under pressure, in the direction of arrow F6 of fig.12, while through the lower duct 33, air, water,  
25 detached hairs, etc., may be sucked in the direction indicated by arrow F5. Therefore, the hose 18 allows to feed hot air under pressure in the respective

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region of the animal's body, while sucking at the same time water, detached hairs, etc.

Other details will now be given, regarding the components of the piece of furniture 1 and their

5 operative function:

- an animal may be laid on the tray-like element 2, and fastened to the hook 20 of the L-shaped arm (19,19a,19b), whose height may be adjusted. On said tray-like element 2 the animal may be sheared, combed,

10 parasites may be removed, etc.;

- the piece of furniture and everything inside it, is mounted on two coaxial non pirouetting wheels 27, and onto two feet 28;

- on one side of the piece of furniture 1, where the  
15 two pipe unions 5a and 6a and the feet 28 are arranged, at least one handle is provided (not shown), to be able to lift the piece of furniture 1 while displacing it on the wheels 27;

- the covering tray-like or tank-like element 2, is  
20 supported along its curved shaped edge 2a, and is engaged with the edge of the aperture of the piece of furniture 1 (fig. 14), in a removable way. Said element 2, 2a is preferably made of fiber glass. It may therefore be easily removed, in order to be  
25 cleaned. On its bottom surface, a rubber plate 22 or the like is applied.

Other advantages of the present invention are:

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- a reduced electric energy consumption with respect to conventional drying devices employing hot air, like the "phon",

- reduction of noise;

5 - possibility of working simultaneously in three different working stations, i.e.:

a) a dog may be put in a washing tank, where an operator, after the washing and rinsing of the animal, may suck water from the dog's body using one of the

10 hoses 14, 16 or 18;

b) an animal is put on the tray-like element 2, where it is sheared and other toilet operations are done, by a second operator;

c) a third animal, placed on a common small table of any type whatever, may be dried by means of a hose 15 connected to the flexible tube 31, said hose being eventually supported by an arm on an articulated joint.

The operative assembly of the present invention provides a high hygiene, because water, hairs, etc. are deposited on the tank 3 which is easily removable and washable.

In an embodiment shown in figs. 15 and 16, the piece of furniture 1A, open at its upper end, but closed by the tray-like element 2, has its inner space divided into a principal space and a sealed space (C), with the same features described and illustrated in the



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first embodiment. The inner principal space of the piece of furniture 1A, contains a sealed tank 23 supported by the base wall 1b, provided internally with a filter 4 and with a cover or closing element 24, crossed by an open end of the suction duct 5' which starts at the external pipe union 5'a. A tube 25, connected to the inside of the tank 23 slightly below the filter 4, realizes an internal communication between the inner chamber of the tank 23 and a second cylindrical tank 26, which is sealed and has a horizontal axis, and inside which the annular blower 7 is mounted, the blower being driven by the electric motor 12 (see fig. 16), showing the vertical cross section taken along line Z-Z of fig. 15.

15 The tank 26 is also sealed.

The two tanks 23 and 26 perform the same functions as the sealed chambers A and B of the first embodiment. The piece of furniture 1A performs only the function of containing the two tanks 23 and 26 and the connection tubes 5', 6', and 25'; the piece of furniture 1A is provided internally with the chamber or space C and lodges the drawer 8 as described for the first embodiment.

20 A third embodiment of the invention, having a simpler construction, but with the same operational features of that shown in figs. 15, 16, is shown in fig. 17, the annular blower 7 driven by the motor 12, being

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simply supported by the base wall 1b of the piece of furniture 1A; the tank 23 and the filter 4 connected to the tube 5', 5'a, is identical to that provided in the second embodiment, whereas the tube 25', coming  
5 from the tank 23, is directly connected with the suction (intake) aperture of the blower 7.

The additional devices are neither described nor illustrated, as for example the components of the electric circuits, including sockets for connection to  
10 electrical devices like clippers, etc., to be realized according to the existing standards and laws.

- A possible indicator of the water level, for example a float, inside the tank 3 or 23 used for collecting water;

15 - possible offtakes for the stream of hot air to be connected to the composite hose of figs. 12, 13, possibly comprising taps or valves for adjusting the flow rate of the hot air stream to be feeded to said hose, and, if required, other devices necessary to  
20 protect against injuries, known to those skilled in the art.

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Claims

1. A piece of furniture with an upper supporting table, for the drying and the toilet of dogs, cats and other similar pets, having a rectangular horizontal cross section, open at its upper end, but closed by a covering element with a horizontal wall, wherein:
- 5 - the piece of furniture (1, 1A) comprises vertical peripheral walls (1a) and a base wall (1b), is open at its upper end, but closed at this point by a horizontal tray-like covering element (2), which is provided with a carpet (22), peripheral edges (2a)
- 10 with a continuous lower groove in order to be hooked to the upper edge of the piece of furniture (1,1A), the inner space of the piece of furniture being divided into at least two chambers or spaces by means of
- 15 internal vertical and horizontal walls in combination with the walls (1a) and (1b), one of said chambers, the chamber or space (C), being sealed and containing electrical devices, whereas the other space/spaces contains/contain devices of an assembly comprising:
- 20 - an annular blower (7), driven by an electric motor (12), the exit aperture of hot air from said blower being connected to a duct (6'), which ends on the outside forming a pipe union (6a), passing through a wall (1a), said pipe union being provided for a
- 25 flexible tube (31) terminating into a hose (15) or

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into a composite hose (18) for feeding hot air under pressure, said composite hose (18) performing two different functions;

- a tank or cylindrical container (3,23) with vertical axis, open upwardly and on whose upper region a filter (4) is mounted, in order to retain hairs or other impurities which have been sucked, the outlet of a suction duct (5) being provided in the opening of the tank, said suction duct (5) ending on the outside by passing through the nearest wall (1a), forming a pipe union (5a) for a flexible tube (13), terminating into a hose simple (14,15) or composite (18), said sucked air being sucked from the suction aperture of the blower (7) by means of a duct (11,11a, 25, 25'), said piece of furniture being supported by a pair of coaxial wheels (27) and by a pair of feet (28), while a vertical height-adjustable telescopic rod (19,19a) projects upwardly from the upper wall of the space (C), and passes through the tray-like element (2) by realizing a seal and projects on said element (2) by means of a horizontal arm (19b) which carries a hook (20) at its end.

2. A piece of furniture according to claim 1, wherein the hose (15) has a cylindrical part (15a) to be connected to the tube (31), whereas the exit end (15b) for hot air is like a truncated cone, the base

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of which having the smaller area corresponding to the free end.

3. A piece of furniture according to claim 1, wherein  
5 the hose (14) has a part (14a) to be connected to the tube (13), having a tubular form, and a terminal part (14b) which becomes gradually flat and wide, forming a suction aperture in the form of an elongated rectangular slot.

10

4. A piece of furniture according to claim 1, wherein the suction hose (16) is formed by a tubular part made of a flexible and elastically deformable material, and such that at one of its ends it will form the suction  
15 aperture which is provided with slight longitudinal cuts (17), in such a way that the operator's hand will flatten said part of the suction aperture, which will assume the shape of a substantially elongated rectangular opening.

20

5. A piece of furniture according to claim 1, wherein the composite hose (18) is substantially realized in a single integral piece, shaped so as to comprise an upper element (32) similar to the hose (15), and a  
25 lower element (33) shaped in a similar way as the hose (14), the front part of the composite hose (18) comprising the air emission and the air suction

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aperture, which have an elongated form and are substantially superimposed.

6. A piece of furniture according to claims 1-5, wherein the piece of furniture (1) is internally divided into four chambers or spaces (A,B,C,D), of which the spaces (A,B,C) are sealed, the spaces (A and B) being arranged below the spaces (D and C) and being bounded by an intermediate vertical wall (1d), peripheral walls (1a), the base wall (1b) and by the horizontal wall (1c), whereas the space (D), bounded by the walls (1a) and (1c), is open upwardly and contains the drawer (8), which is mounted on the guide bearings (30) and has a front external wall (8a); on the opposite side of the space (D) with respect to the position of the drawer (8), the space (C) is provided, bounded by the wall (1c), by one of the walls (1a), by the vertical wall (1e) and by the horizontal wall (1f), said space (C) having a height which is less than the distance between the wall (1c), and the upper boundary of the piece of furniture (1); whereby: the space (A) contains the tank (3) provided with the filter (4) and whose aperture is faced by the aperture of the suction duct (5), terminating into the external pipe union (5a);
- the space (B) contains the electric motor (12) which drives the annular blower (7), the space (A) being in

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internal communication with the space (B) by means of a duct (11), which passes through the wall (1d) realizing a seal and projecting into the space (B) forming a hood (11a) arranged above the housing (12a) of the electric motor, the sucked air being heated by contact with said housing, the latter being cooled in this way, the sucked air being afterwards sucked into the suction aperture of the blower (7), the piece of furniture (1) being provided on its front part, in alignment with the spaces (A and B), with access doors (9 and 10) carrying gaskets and sealing means.

7. A piece of furniture according to claims 1-5, wherein the piece of furniture (1A) comprises in its inner cavity and slightly below the aperture of the piece of furniture (1), a sealed space (C) which contains the electric and safety devices, from whose upper wall (1f) the L-shaped arm (19,19a,19b) extends upwardly and above the covering tray-like element (2), whereas a drawer (8) slidable on a guide bearing (30) is arranged laterally with respect to said space (C), and in the lower space a cylindrical tank (23) with a vertical axis is laid on the base wall (1b) and sealed by means of a cover (24), said tank being provided near its opening with a filter (4), the suction duct (5') crossing the cover (24) and ending into said tank (23), while at the other end, it terminates into the

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pipe union (5'a); a duct (25) starting from a point on the surface of the tank (23) below said filter (4) extends towards and ends into a second cylindrical tank (26) which is sealed and has a horizontal axis, and inside which is mounted the assembly comprising the electric motor (12) and the annular blower (7), whose suction aperture opens inside said tank (26), whereas the emission aperture of the air produced by the blower (7), is connected to the duct (6'), which enters into the tank (26) by realizing a seal, said duct passing through the wall (1a) of the piece of furniture (1A) ending into a pipe union (6'a) for the connection with the flexible tube (31).

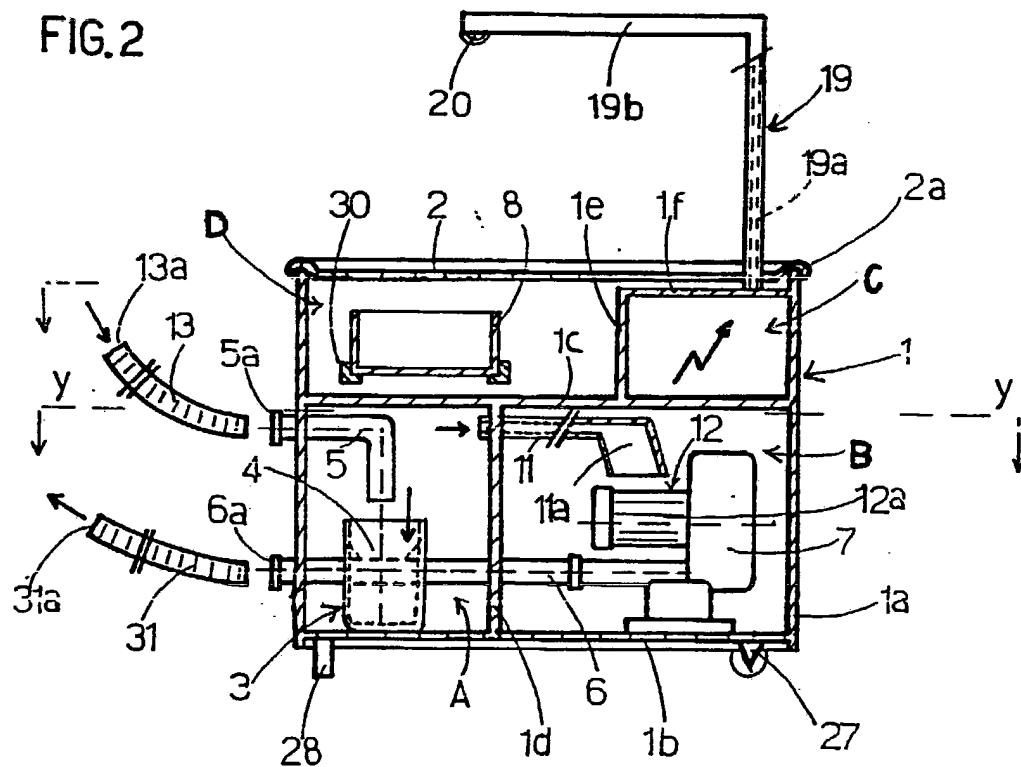
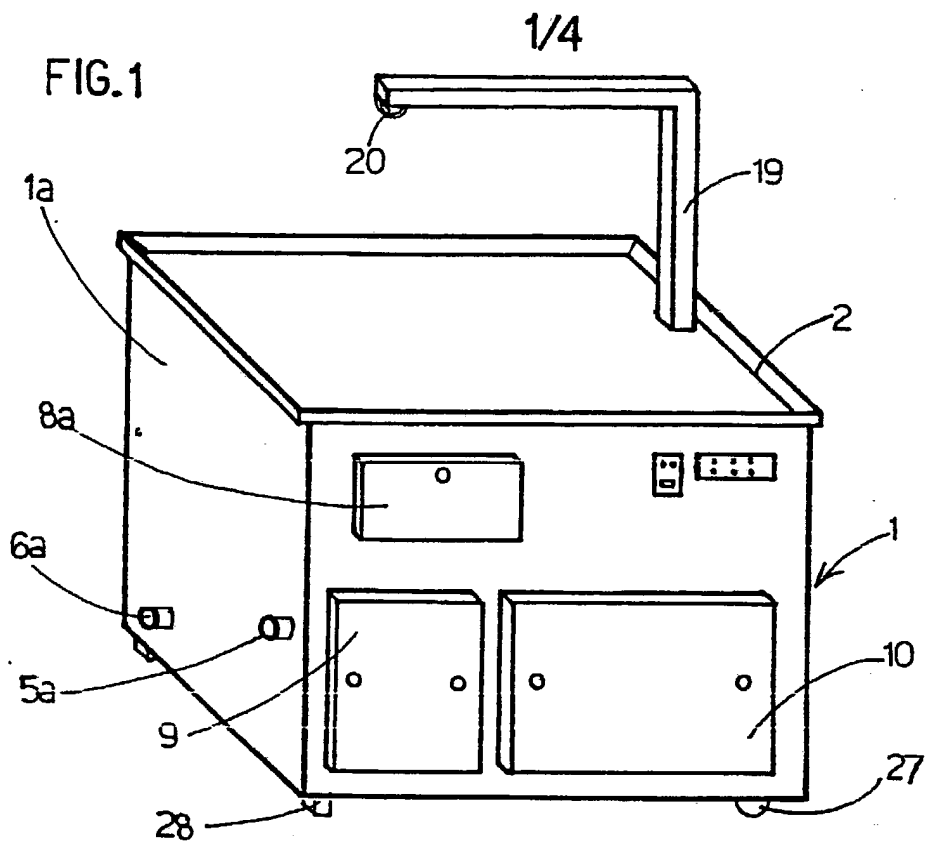
8. A piece of furniture according to claims 1-5 and 7, wherein:

- in the inner space of the piece of furniture (1A) divided into a principal space, - open upwardly and closed by the covering element (2) -, and a sealed chamber (C), there are mounted, on the base wall (1b), the tank (23) having a vertical axis, containing the filter (4) and provided with the sealed cover (24) crossed by the suction duct (5,5'a) which ends into the tank (23), whereas directly on said base wall (1b) there is mounted the assembly which comprises the blower (7) and the driving electric motor (12); a duct (25') being provided, which enters into the tank (23) below



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the filter (4), whereas at the other end it is directly connected to suction aperture of the blower (7), the duct (6') for the emission of hot air under pressure being connected, by means of its outer pipe union (6'a),  
5 to the flexible tube (31), and terminating at its other end into the blowing aperture of the blower (7).



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FIG.3

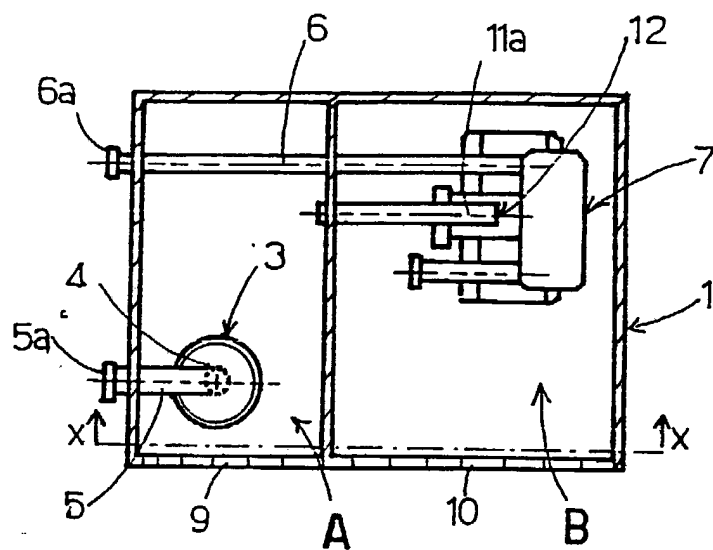
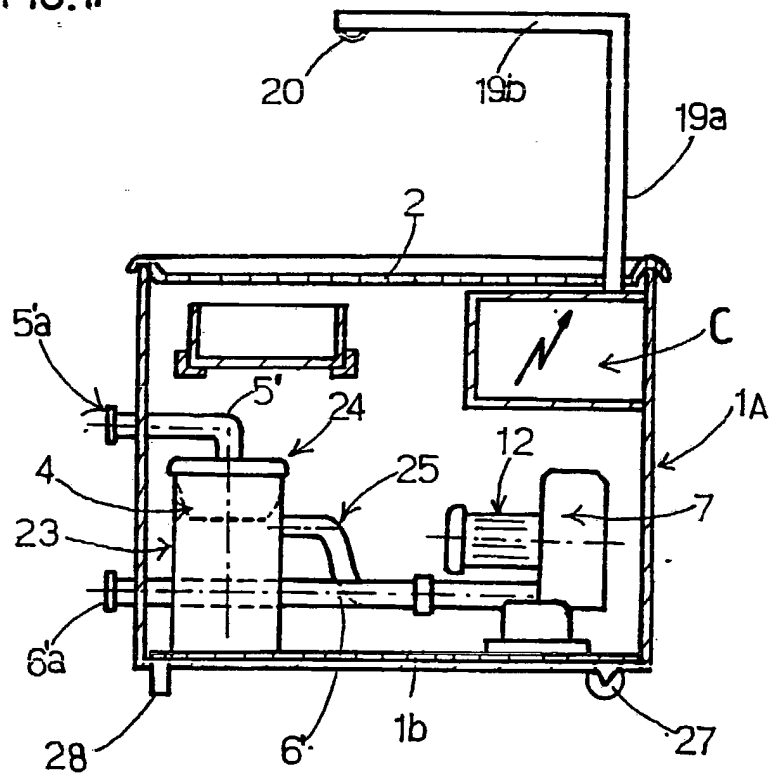
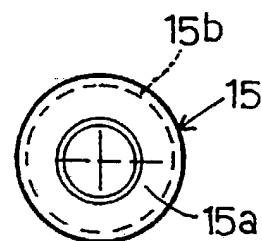
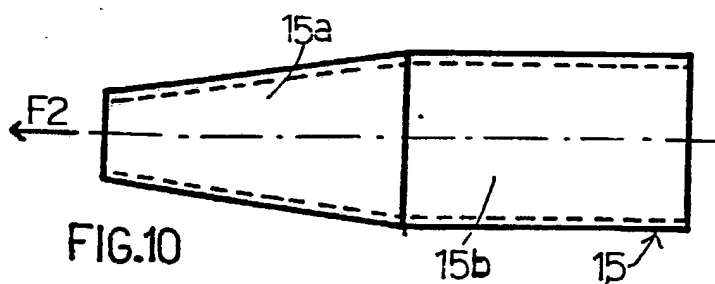
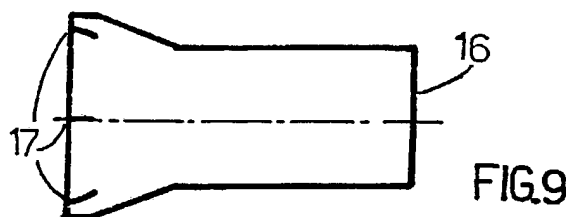
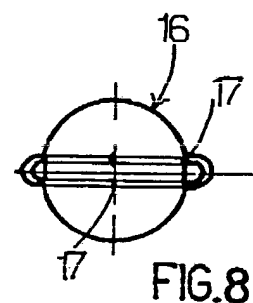
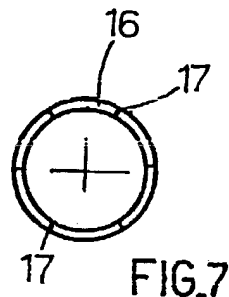
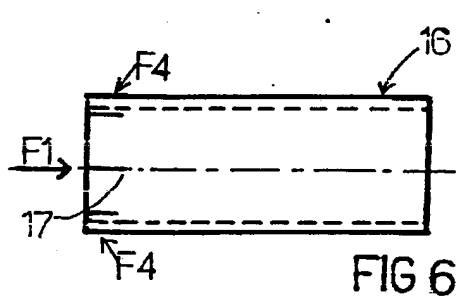
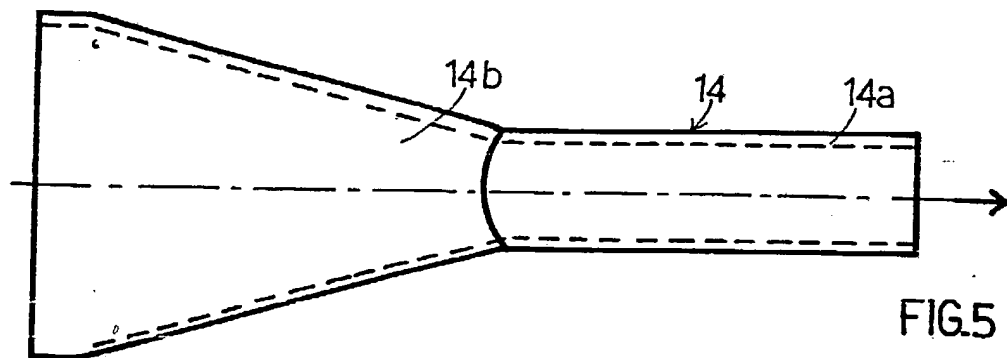
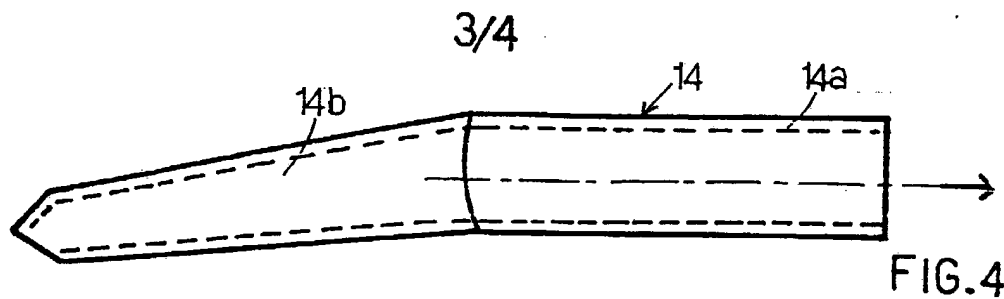


FIG.17





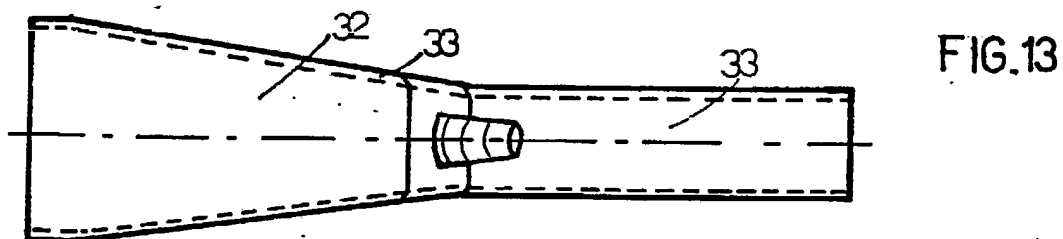
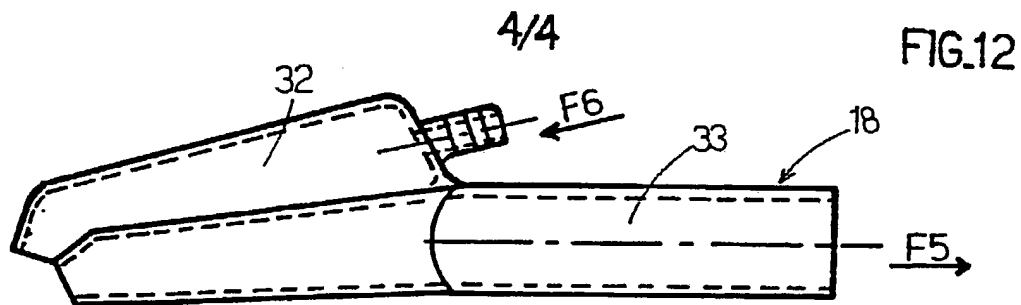


FIG.15

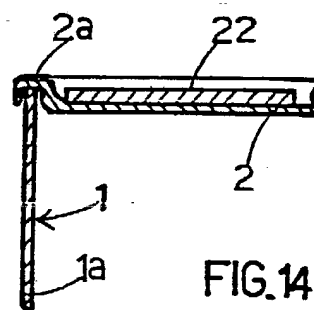
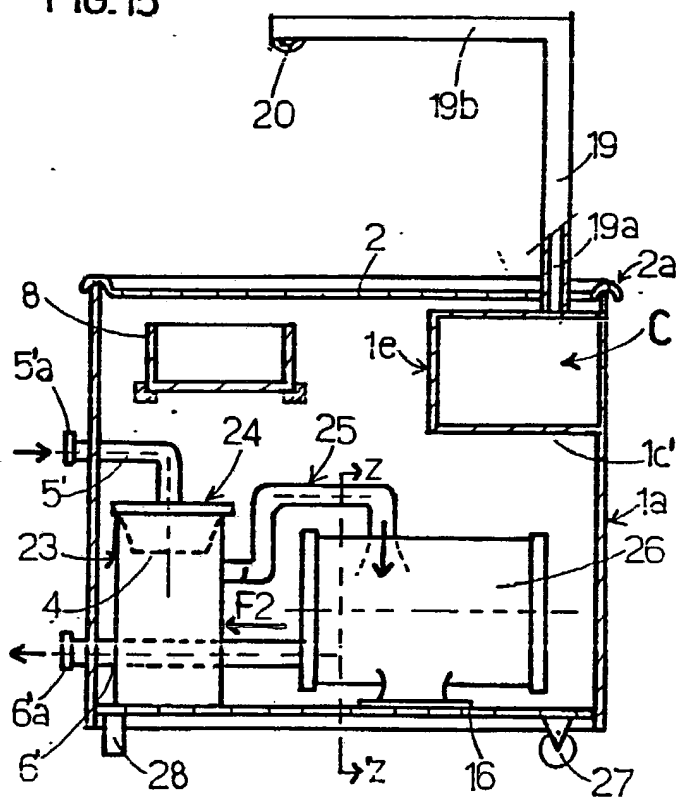
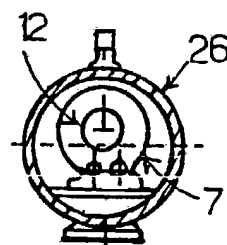


FIG.14

FIG.16



## INTERNATIONAL SEARCH REPORT

PCT/IT 92/00120

International Application No

<b>I. CLASSIFICATION OF SUBJECT MATTER</b> - (if several classification symbols apply, indicate all) <sup>6</sup>		
According to International Patent Classification (IPC) or to both National Classification and IPC Int.C1. 5 A01K13/00		
<b>II. FIELDS SEARCHED</b>		
Minimum Documentation Searched <sup>7</sup>		
Classification System	Classification Symbols	
Int.C1. 5	A01K	
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched <sup>8</sup>		
<b>III. DOCUMENTS CONSIDERED TO BE RELEVANT<sup>9</sup></b>		
Category <sup>10</sup>	Citation of Document, <sup>11</sup> with indication, where appropriate, of the relevant passages <sup>12</sup>	Relevant to Claim No. <sup>13</sup>
A	FR,A,2 580 467 (VILLADERE) 24 October 1986 ----	
A	US,A,4 836 144 (COLE) 6 June 1989 ----	
A	GB,A,2 144 317 (YONESH COMPANY LIMITED) 6 March 1985 ----	
A	FR,A,2 543 795 (JEANDOT & HOUILLON) 12 October 1984 -----	
<p><sup>10</sup> Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&amp;" document member of the same patent family</p>		
<b>IV. CERTIFICATION</b>		
Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report	
28 DECEMBER 1992	14. 01. 93	
International Searching Authority	Signature of Authorized Officer	
EUROPEAN PATENT OFFICE	VERDOODT S.J.M.	

**ANNEX TO THE INTERNATIONAL SEARCH REPORT  
ON INTERNATIONAL PATENT APPLICATION NO. IT 9200120  
SA 65736**

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report.  
The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information. 28/12/92

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
FR-A-2580467	24-10-86	None	
US-A-4836144	06-06-89	None	
GB-A-2144317	06-03-85	FR-A,B 2550054	08-02-85
FR-A-2543795	12-10-84	None	